A7V8X-X

User Guide

Motherboard

E1198

First Edition V1

January 2003

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Notices

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

> The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.

- Seek professional assistance before using an adpater or extension cord. These devices could interrupt the grounding circuit.

- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.

- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.

- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.

- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.

- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.

- Place the product on a stable surface.

- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

WARNING/DANGER: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Information that you MUST follow to complete a task.

NOTE: Tips and additional information to aid in completing a task.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Websites**

    The ASUS websites worldwide provide updated information on ASUS hardware and software products. The ASUS websites are listed in the ASUS Contact Information on page viii.

2. **Optional Documentation**

    Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

ASUS contact information

ASUSTeK COMPUTER INC. (Asia-Pacific)

Address: 150 Li-Te Road, Peitou, Taipei, Taiwan 112
General Tel: +886-2-2894-3447
General Fax: +886-2-2894-3449
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Technical Support

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Notebook (Tel):   +886-2-2890-7122 (English)
Desktop/Server (Tel): +886-2-2890-7123 (English)
Support Fax: +886-2-2890-7698
Support Email: tsd@asus.com.tw
Web Site: www.asus.com.tw

ASUS COMPUTER INTERNATIONAL (America)

Address: 6737 Mowry Avenue, Mowry Business Center,
                   Building 2, Newark, CA 94560, USA
General Fax: +1-510-608-4555
General Email: tmd1@asus.com

Technical Support

Support Fax: +1-510-608-4555
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Web Site: www.asus.com
Support Email: tsd@asus.com

ASUS COMPUTER GmbH (Germany and Austria)

Address: Harkortstr. 25, 40880 Ratingen, BRD, Germany
General Fax: +49-2102-442066
General Email: sales@asuscom.de (for marketing requests only)

Technical Support

Support Hotline: MB/Others: +49-2102-9599-0
Notebook (Tel):   +49-2102-9599-10
Support Fax: +49-2102-9599-11
Support (Email):   www.asuscom.de/de/support (for online support)
Web Site: www.asuscom.de

A7V8X-X specifications summary

CPU	Socket A for AMD Barton/Thoroughbred/Athlon XP/Athlon/ Duron 2.25+ GHz CPU
Chipset	Northbridge: VIA KT400 Southbridge: VIA VT8235
Front Side Bus (FSB)	200/266/333Mhz
Memory	3 x DDR DIMM Sockets Max. 3 GB unbuffered PC2100/1600 non-ECC DDR SDRAM (*Note: PC3200 maximum to 2 banks only. PC2700 maximum to 4 banks only.*)
Expansion slots	1 x AGP 8X 6 x PCI
IDE	2 x UltraDMA 133/100/66
Audio (optional)	ADI 1980 6-channel CODEC S/PDIF out interface
LAN (optional)	Realtek 10/100 Mbps Ethernet PHY
USB 2.0	VT8235 built-in USB 2.0 6 x USB 2.0 ports
Special Features	ASUS MyLogo ASUS EZ Flash ASUS C.P.R. (CPU Parameter Recall) Power Loss Restart ASUS Jumperfree SFS (Stepless Frequency Selection) ASUS C.O.P. (CPU Overheating Protection) CrashFree BIOS
Back Panel I/O Ports	1 x Parallel 1 x Serial 1 x S/PDIF out (on audio model only) 1 x PS/2 Keyboard 1 x PS/2 Mouse 1 x Audio I/O (on audio model only) 4 x USB 2.0 1 x RJ-45 Port (on LAN model only)
Internal I/O Connectors	CPU/Chassis FAN connector 20 pin ATX power connector IDE LED connector Chassis Intrusion GAME port (on audio model only) CD/AUX audio in (on audio model only) Front panel audio connector (on audio model only) 1 x USB 2.0 connector supports additional 2 USB 2.0 ports

A7V8X-X specifications summary (Cont')

BIOS features	2Mb Flash ROM, Award BIOS, DMI2.0, PnP, WfM2.0, SM BIOS 2.3, TCAV, EZ Flash, ASUS MyLogo, ASUS CrashFree BIOS, ASUS JumperFree, ASUS C.P.R.
Industry standard	PCI 2.2, USB 2.0
Manageability	WfM2.0, DMI2.0, WOR, WOL, Chassis Intrusion
Form Factor	ATX form factor: 12 in x 9.6 in (30.5 cm x 24.5 cm)
Support CD contents	Device drivers ASUS PC Probe Trend Micro™ PC-cillin 2002 anti-virus software ASUS LiveUpdate Utility
Accessories	User's manual Support CD 1 x UltraDMA 133/100/66 cable FDD cable I/O shield

* Specifications are subject to change without notice.

Chapter 1

This chapter gives information about the ASUS A7V8X-X motherboard that came with the system.This chapter includes the motherboard layout, jumper settings, and connector locations.

Motherboard Info

1.1 Welcome!

Thank you for buying the ASUS® A7V8X-X motherboard!

The ASUS A7V8X-X motherboard is loaded with the most advanced technologies to deliver the maximum performance for socket A processors. This motherboard is loaded with value-added features for guaranteed consumer satisfaction. Unique ASUS features such as ASUS C.O.P., ASUS C.P.R., ASUS EZFlash, ASUS JumperFree, ASUS MyLogo, ASUS CrashFree BIOS and more are included to ensure the best user experience and value in a motherboard. For future upgrades or system reconfiguration, this chapter provides technical information about the motherboard.

Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below.

1.2 Package contents

Check your ASUS A7V8X-X package for the following items.

✓ ASUS A7V8X-X motherboard
   ATX form factor: 12 in x 9.6 in (30.5 cm x 24.5 cm)

✓ ASUS A7V8X-X series support CD

✓ 1 pc. 80-conductor ribbon cable for UltraDMA/66/100/133 IDE drives

✓ Ribbon cable for a 3.5-inch floppy drive

✓ Bag of extra jumper caps

✓ User Guide

✓ I/O shield

1.3 Motherboard components

Before you install the motherboard, learn about its major components and available features to facilitate the installation and future upgrades. Refer to the succeeding pages for the component descriptions.
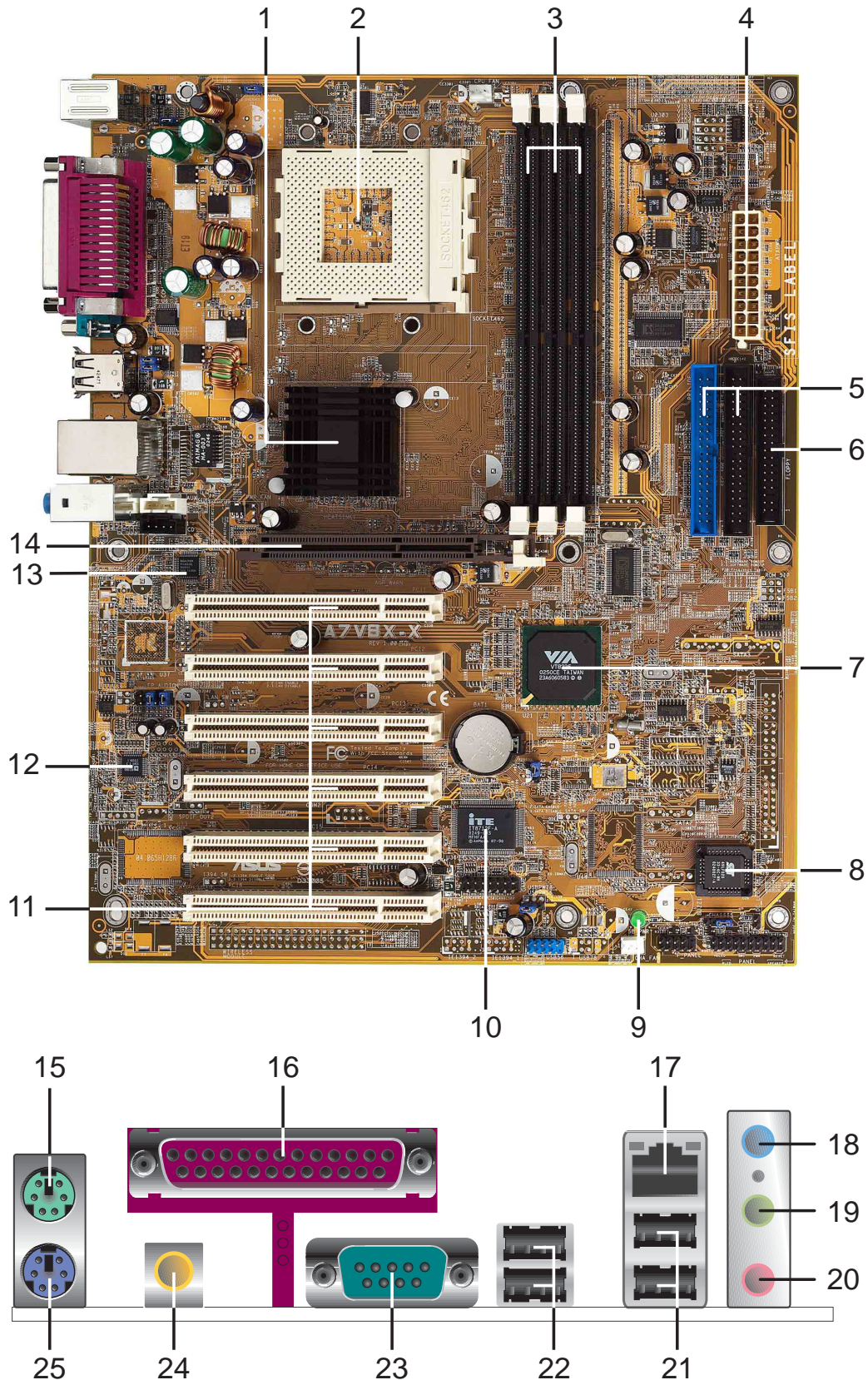
1.3.1 Core specifications

1 **North bridge controller.** The **VIA® KT400** supports AGP 8X mode, 333/266/200MHz Front Side Bus, and the latest 400/333/266/200MHz 64-bit memory bus.

2 **CPU socket.** Socket 462 (Socket A) surface mount, Zero Insertion Force (ZIF) socket for the AMD Barton/Thoroughbred/Athlon XP/Athlon/Duron Processors, with 600 MHz ~ 2.25GHz system bus. (Note: When using 333MHz FSB CPU, system memory supports DDR333 only.)

TABLE 1.3.1
FSB/DDR
Support Table

FSB	DDR 266	DDR 333	DDR 400
200/266 MHz	✓	✓	✓
333 MHz		✓	

3 **DDR DIMM sockets.** These three 184-pin DIMM sockets support up to 3GB system memory using unbuffered non-ECC PC2100/1600 DDR DIMMs. (*Note: PC2700 maximum to 4 banks only. PC3200 maximum to 2 banks only. Visit the ASUS website [www.asus.com] for the latest qualified DDR400 module list.)*

4 **ATX power connector.** This 20-pin connector connects to an ATX +12V power supply. The power supply must have at least 1A on the +5V standby lead (+5VSB).

5 **IDE connectors.** These dual-channel bus master IDE connectors support up to four Ultra DMA133/100/66, PIO Modes 3 & 4 IDE devices. Both the primary (blue) and secondary (black) connectors are slotted to prevent incorrect insertion of the IDE ribbon cable.

6 **Floppy disk connector.** This connector accommodates the provided ribbon cable for the floppy disk drive. One side of the connector is slotted to prevent incorrect insertion of the floppy disk cable.

7 **South bridge controller.** The **VIA® VT8235** integrated peripheral controller supports various I/O functions including, 2-channel ATA/133 bus master IDE controller, up to six USB 2.0 ports, LPC Super I/O interface, AC'97 interface and PCI 2.2 interface.

8 **Flash ROM.** This 2Mb firmware contains the programmable BIOS program.

9 **Standby power LED.** This LED lights up if there is a standby power on the motherboard. This LED acts as a reminder to turn off the system power before plugging or unplugging devices.

10 **Super I/O controller.** This Low Pin Count (LPC) interface provides the commonly used Super I/O functionality. The chipset supports a high-performance floppy disk controller for a 360K/720K/1.44M/2.88M floppy disk drive, a multi-mode parallel port, two standard compatible UARTs and a Flash ROM interface.

11 **PCI slots.** These six 32-bit PCI 2.2 expansion slots support bus master PCI cards like SCSI or LAN cards with 133MB/s maximum throughput.

12 **Audio CODEC .** The ADI AD1980 is an AC'97 CODEC that allows 6-channel audio playback. The audio CODEC provides six DAC channels for 5.1 surround sound, S/PDIF interface, AUX and Line In stereo inputs, integrated headphone amplifier, greater than 90dB dynamic range. *(on audio models only)*

13 **LAN PHY.** This Realtek RTL8201BL LAN PHY supports your local area networking needs. (*on LAN model only*)

14 **AGP slot.** This Accelerated Graphics Port (AGP) slot supports 1.5V AGP8X mode graphics cards for 3D graphical applications.

15 **PS/2 mouse port.** This green 6-pin connector is for a PS/2 mouse.

16 **Parallel port.** This 25-pin port connects a parallel printer, a scanner, or other devices.

17 **RJ-45 port.** This port allows connection to a Local Area Network (LAN) through a network hub. *(on LAN models only)*

18 **Line In jack.** This Line In (light blue) jack connects a tape player or other audio sources. In 6-channel mode, the function of this jack becomes Bass/Center. *(on audio models only)*

19 **Line Out jack.** This Line Out (lime) jack connects a headphone or a speaker. In 6-channel mode, the function of this jack becomes Front Speaker Out. *(on audio models only)*

20 **Microphone jack.** This Mic (pink) jack connects a microphone. In 6-channel mode, the function of this jack becomes Rear Speaker Out. *(on audio models only)*

The functions of the Line Out, Line In and Microphone jacks change when you select the 6-channel audio configuration as shown in the following table:

Audio 2, 4 or 6-channel configuration (*Note:Win98SE supports 4-channel only.*)

	Headphone/ 2-Speaker	4-Speaker	6-Speaker
Light Blue	Line In	Line In	Bass/Center
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Rear Speaker Out	Rear Speaker

21 **USB 2.0 ports 3 and 4.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

22 **USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

23 **Serial port.** This 9-pin COM1 port is for pointing devices or other serial devices.

24 **S/PDIF out port.** This port connects to external home theater systems for surround sound and enhanced 3D audio when playing DVDs or games.

25 **PS/2 keyboard port.** This purple 6-pin connector is for a PS/2 keyboard.

1.4　Special features

1.4.1　Product highlights

333MHz FSB Athlon XP CPU support

AMD's Athlon XP 2800+ and all follow-up CPUs now support 333MHz Front Side Bus (FSB) for increased application program productivity and enhanced digital media experience.

AGP 8X support

AGP 8X (AGP 3.0) is the next generation VGA interface specification that enables enhanced graphics performance with high bandwidth speeds up to 2.12 GB/s. With a bus of 533Mhz, AGP 8X is twice as fast as AGP 4X.

DDR400 (PC3200) support

DDR400 (PC3200), the latest and fastest DDR memory standard, supports bandwidth up to 3.2 GB/s to provide enhanced system performance.
(Note: PC2700 maximum to 4 banks only. PC3200 maximum to 2 banks only.)

C.O.P. (CPU Overheating Protection):

With AMD® Athlon XP™ installed, the motherboard offers automatic CPU Overheating Protection to prolong the life of the entire system. If the CPU temperature exceeds the set criteria, the PC shuts down automatically.

ASUS EZ Flash

With ASUS EZ Flash, you can update BIOS before entering operating system. No more DOS-based flash utility and bootable diskette required.

SoundMax Digital Audio System *(on audio models only)*

The SoundMax Digital Audio System is the industry's highest performance and most reliable audio solution for business professionals, audiophiles, musicians, and gamers. SoundMAX Digital Audio System can output 5.1 channel surround and features state-of-the-art DLS2 MIDI synthesizer with Yamaha DLSbyXG sound set, 5.1 Virtual Theater™ and supports all major game audio technologies including Microsoft DirectX™8.0, Microsoft DirectSound 3D™, A3D, MacroFX, ZoomFX, MultiDrive 5.1 and EAX. Refer to section "3.2.5 Multi-channel audio feature" on page 3-5 for more information.

C.P.R. (CPU Parameter Recall)

When the system hangs due to overclocking failure, there is no need to open the case to clear the CMOS data. Simply restart the system and the BIOS will automatically restore the CPU default setting for each parameter.

CrashFree BIOS

CrashFree BIOS allows users to restore BIOS data from a floppy diskette even when BIOS code and data are corrupted during upgrade or invaded by a virus. Unlike other competing vendors' products, ASUS motherboards now enable users to enjoy this protection feature without the need to pay for an optional ROM.

1.5 Motherboard layout
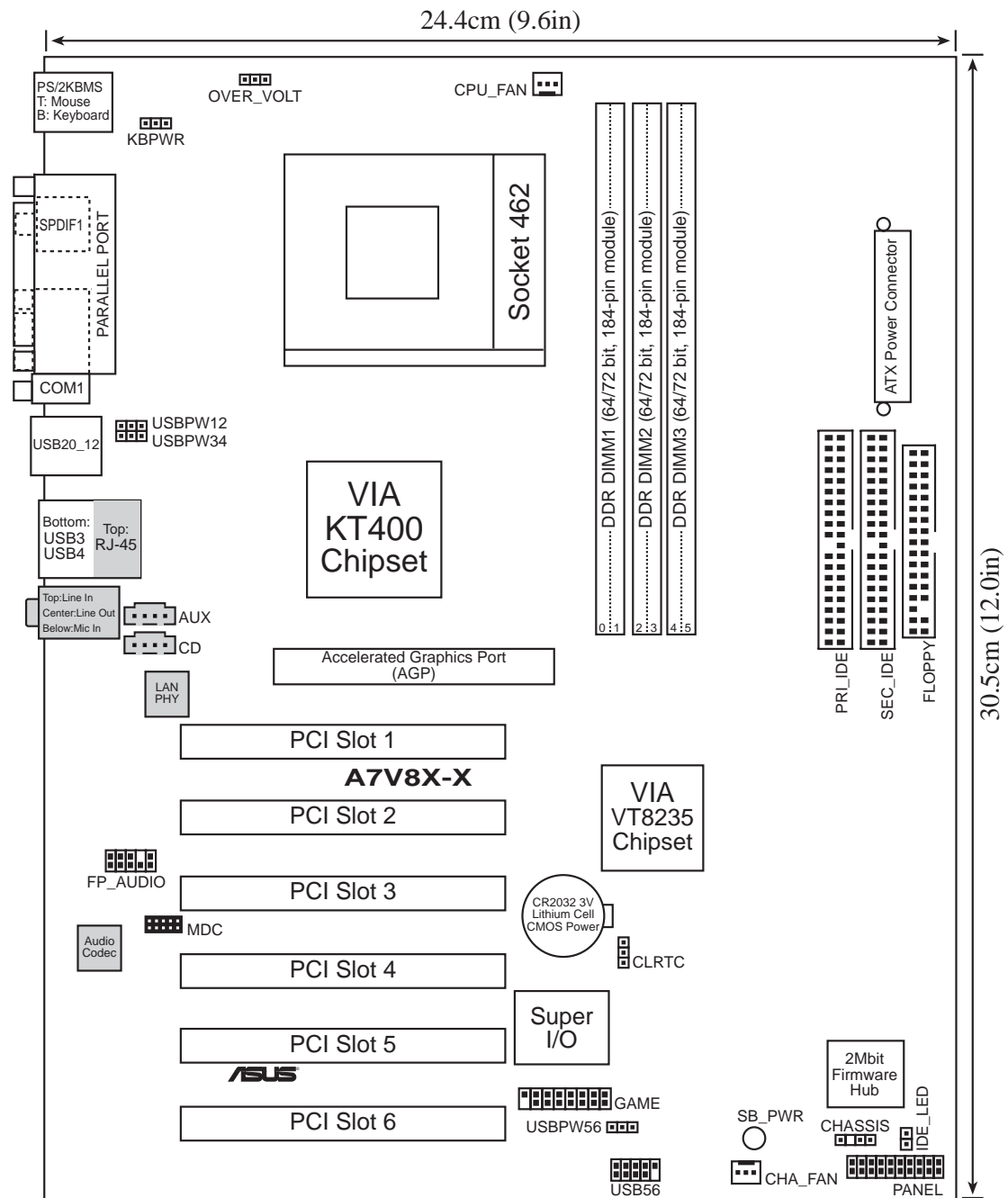
1.6   Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component.

2. Use a grounded wrist strap or touch a safely grounded object or to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.

3. Hold components by the edges to avoid touching the ICs on them.

4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

5. **Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply.** Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.
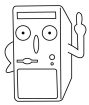
When lit, the green LED (SB_PWR) indicates that the system is ON, in sleep mode, or in soft-off mode, a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component.

A7V8X-X Onboard LED

SB_PWR

ON
Standby
Power

OFF
Powered
Off
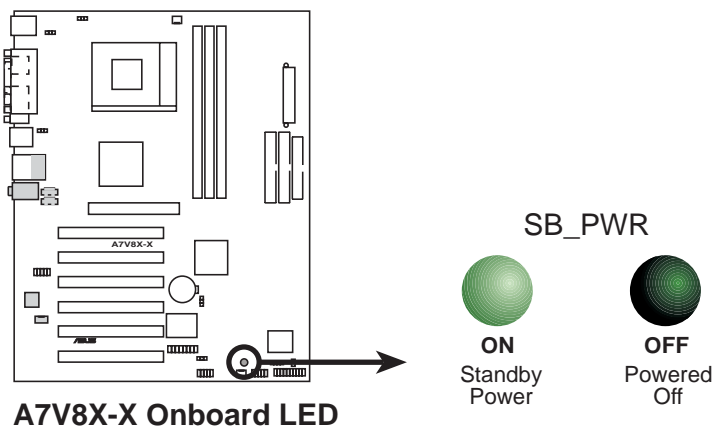
Install only 1.5V AGP cards on this motherboard to prevent damage to your AGP card or motherboard.

1.7 Motherboard installation

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. The motherboard uses the ATX form factor that measures 12 inches x 9.6 inches (30.5 cm x 24.5 cm).

> Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause you physical injury and damage motherboard components.

1.7.1 Placement direction

When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.
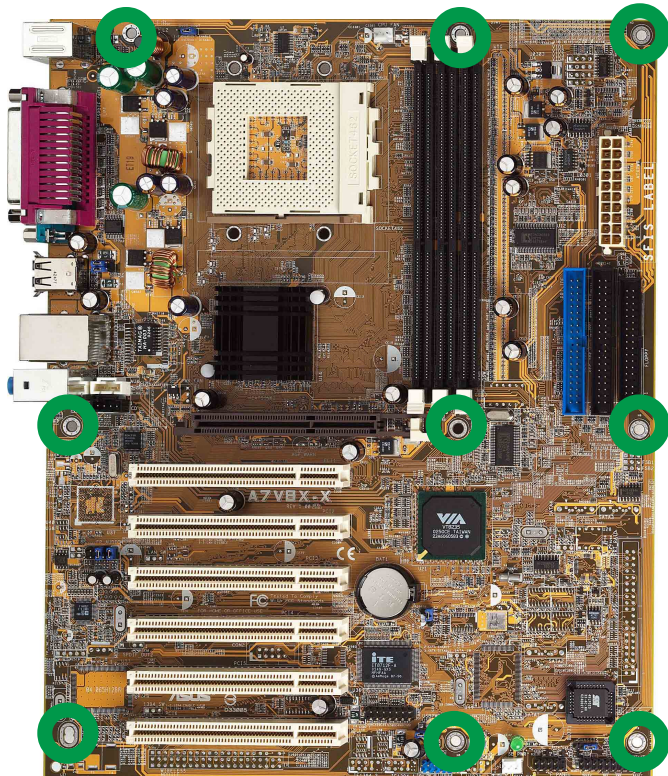
1.7.2 Screw holes

Place nine (9) screws into the holes indicated by circles to secure the motherboard to the chassis.

> Do not overtighten the screws! Doing so may damage the motherboard.

Place this side towards the rear of the chassis

1.8 Central Processing Unit (CPU)

The motherboard provides a Socket A (462) for CPU installation. AMD processors offer gigahertz speeds to support all the latest computing platforms and applications. The A7V8X-X supports Athlon™ XP, Athlon™, Barton™ and Duron™ processors.

A7V8X-X Socket A

AMD™ CPU

CPU NOTCH
TO INNER
CORNER

CPU NOTCH

LEVER   LOCK
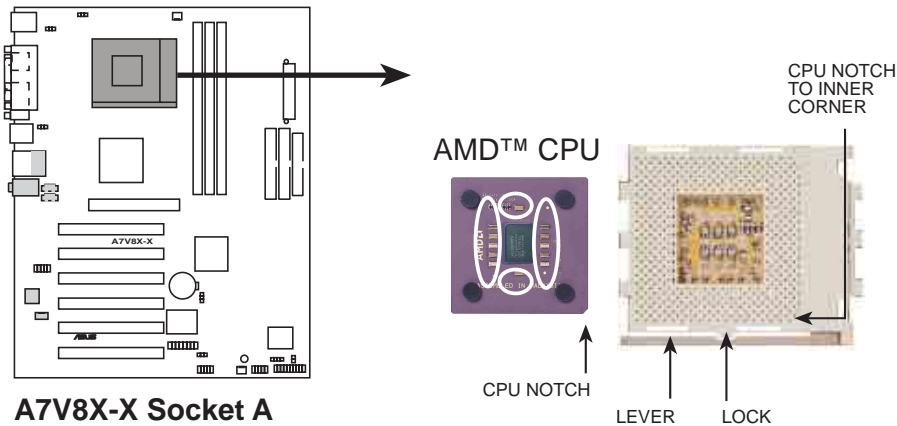
1.8.1 Installing the CPU

Follow these steps to install a CPU:

1. Locate the Socket 462 and open it by pulling the lever gently sideways away from the socket. Then lift the lever upwards. The socket lever must be fully opened (90 to 100 degrees).

2. Insert the CPU with the correct orientation. The **notched or golden corner** of the CPU must be oriented toward the inner corner of the socket base nearest to the lever hinge.
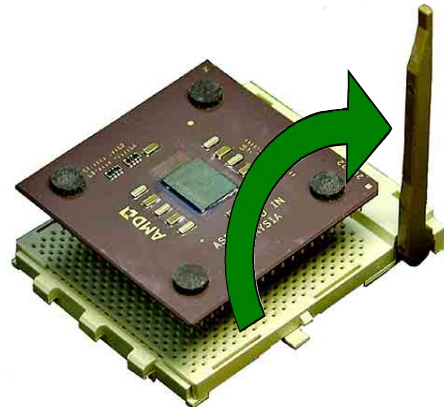
> The CPU should drop easily into place. **Do not force the CPU** into the socket to avoid bending the pins. If the CPU does not fit, check its alignment and look for bent pins.

4. Once completely inserted, press the CPU firmly and close the socket lever until it snaps shut.

5. Place the CPU fan and heatsink on the CPU. The heatsink should entirely cover the CPU. Carefully attach the heatsink locking brace to the plastic clips on the socket base. With the added weight of the CPU fan and heatsink locking brace, no extra force is required to keep the CPU in place

1.9   System memory

The motherboard has three Double Data Rate (DDR) DIMM sockets that supports up to 3GB unbuffered non-ECC PC3200/2700/2100/1600 DDR DIMMs.

A DDR DIMM has the same physical dimensions as an SDR DIMM, but it has a 184-pin footprint compared to the 168-pin of the SDR DIMM. Also, a DDR DIMM is single notched while an SDR DIMM is double notched.
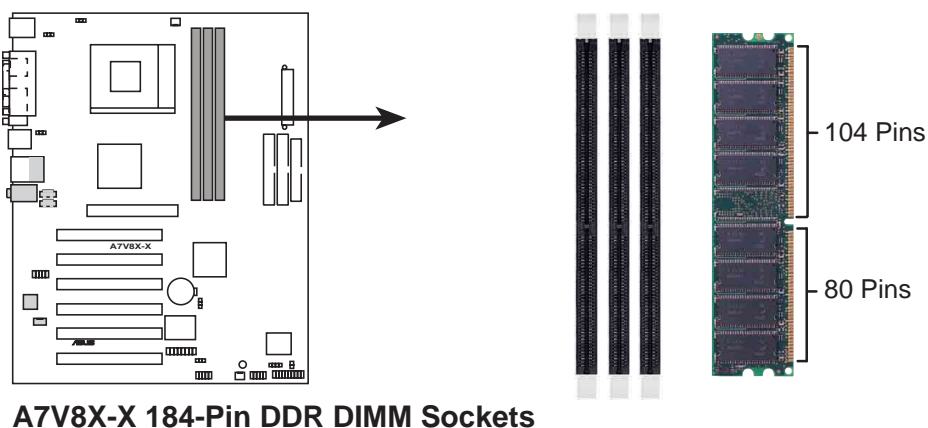
A7V8X-X 184-Pin DDR DIMM Sockets

A DDR or SDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

PC3200 maximum to 2 banks only and PC2700 maximum to 4 banks only.

1.10   Expansion slots

The A7V8X-X motherboard has six (6) expansion PCI slots and one (1) AGP 8X slot. The following sub-sections describe the slots and the expansion cards that they support.

1.10.1 Configuring an expansion card

After physically installing the expansion card, configure the card by adjusting the software settings.

1.   Turn on the system and change the necessary BIOS settings, if any.

2.   Assign an IRQ to the card. Refer to the tables below.

3.   Install the software drivers for the expansion card.

1.10.2 Standard Interrupt Assignments

IRQ	Standard Function
0	System Timer
1	Keyboard Controller
2	Programmable Interrupt Controller
3*	USB Universal Host Controller
4*	Communications Port (COM1)
5*	Onboard Audio
6	Standard Floppy Disk Controller
7*	Printer Port (LPT1)
8	System CMOS/Real Time Clock
9*	Onboard LAN
10*	USB Universal Host Controller
11*	Onboard VGA
12*	PS/2 Compatible Mouse Port
13	Numeric Data Processor
14*	Ultra ATA Controller
15*	Secondary Ultra ATA Controller

*These IRQs are usually available for ISA or PCI devices.

IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCI slot 1	—	—	—	shared	—	—	—	—
PCI slot 2	shared	—	—	—	—	—	—	—
PCI slot 3	—	shared	—	—	—	—	—	—
PCI slot 4	—	—	shared	—	—	—	—	—
PCI slot 5	—	—	—	shared	—	—	—	—
PCI slot 6	shared	—	—	—	—	—	—	—
AGP slot	shared	—	—	—	—	—	—	—
USB 1.1 UHCI 1	—	—	—	—	—	shared	—	—
USB 1.1 UHCI 2	—	—	—	—	—	shared	—	—
USB 1.1 UHCI 3	—	—	—	—	—	shared	—	—
USB 2.0 EHCI	—	—	—	—	—	shared	—	—
AC97 Codec	—	—	—	—	—	—	used	—
Onboard LAN	—	—	shared	—	—	—	—	—
Onboard IDE	—	—	—	—	used	—	—	—

1.10.3 AGP slot

This motherboard has an Accelerated Graphics Port (AGP) slot that supports
+1.5V AGP cards only. When you buy an AGP card, make sure that you ask for
one with +1.5V specification. Note the notches on the card golden fingers to
ensure that they fit the AGP slot on your motherboard.
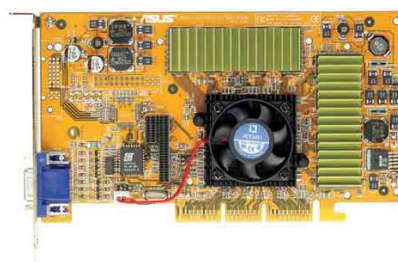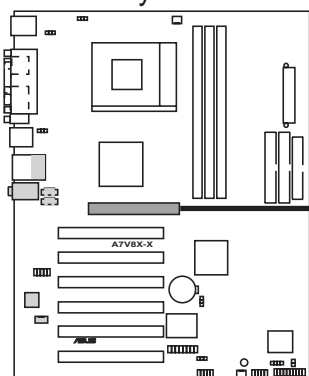
A7V8X-X Accelerated Graphics Port (AGP)

1.11 Jumpers

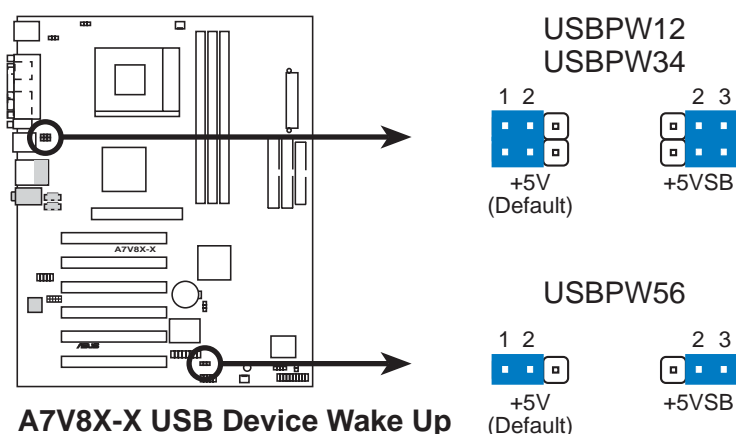This section describes and illustrates the jumpers on the motherboard.

1. **USB device wake-up (3-pin USBPWR12,USBPWR34,USBPWR56)**

   Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 sleep mode (no power to CPU, DRAM in slow refresh, power supply in reduced power mode). Both jumpers are set to pins 1-2 (+5V) by default because not all computers have the appropriate power supply to support this feature.

   The USBPWR12 and USBPWR34 jumpers are for the rear USB ports. USBPWR56 is for the internal USB header that you can connect to the front USB ports.

   > This feature requires a power supply that can provide at least 1A on the +5VSB lead when these jumpers are set to +5VSB. Or, the system does not power up. The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

USBPW12
USBPW34

1 2	2 3
+5V (Default)	+5VSB

USBPW56

1 2	2 3
+5V (Default)	+5VSB

A7V8X-X USB Device Wake Up

2. **V_CORE over-voltage (3-pin OVER_VOLT)**

   When enabled, this jumper allows CPU V_{CORE} ranges of 1.7V to 2.05V.

   When this jumper is disabled, V_{CORE} setting has a range of +1.5V to +1.85V. You may adjust the CPU V_{CORE} through the BIOS Setup.

OVER_VOLT

| 1 2	2 3
Enable	Disable (Default)

A7V8X-X OVER_VOLT Setting
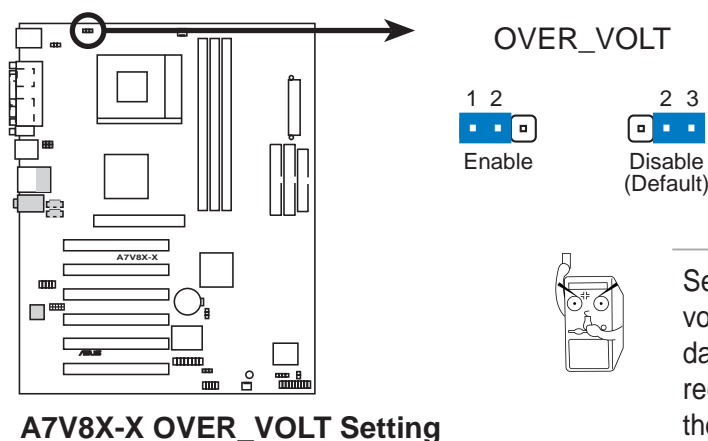
> Setting to a very high core voltage may cause permanent damage to the CPU. It is recommended that you keep the default setting (Disable).

3. Clear RTC RAM (CLRTC)

These jumpers allow you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The RAM data in CMOS is powered by the onboard button cell battery.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the battery.
3. Short the jumper by placing the jumper cap to pins [1-2] and replace it to pins [2-3] after 3 seconds.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.
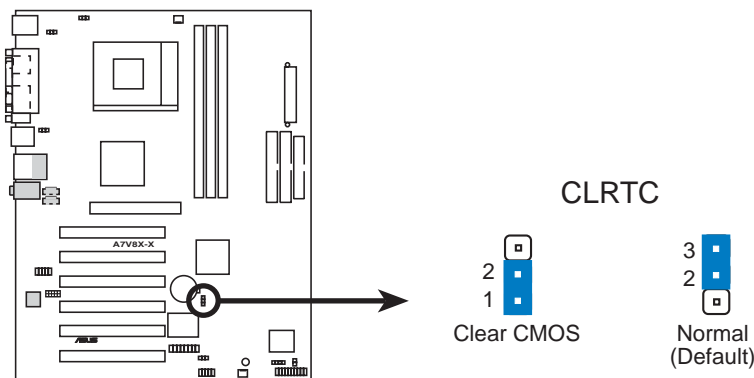
A7V8X-X Clear RTC RAM Setting

4. Keyboard power (3-pin KBPWR)

This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) if you wish to wake up the computer when you press a key on the keyboard (the default value is [Disabled]). This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.
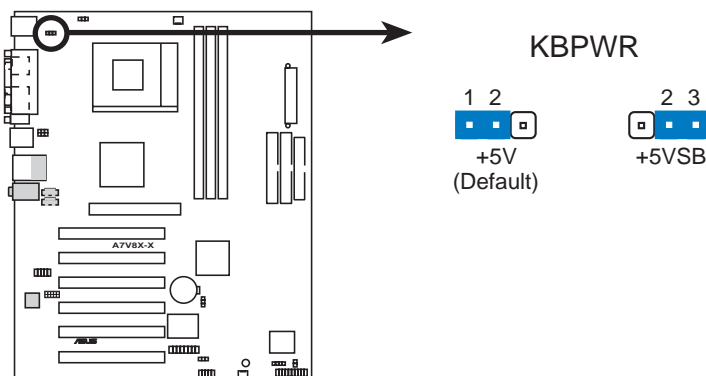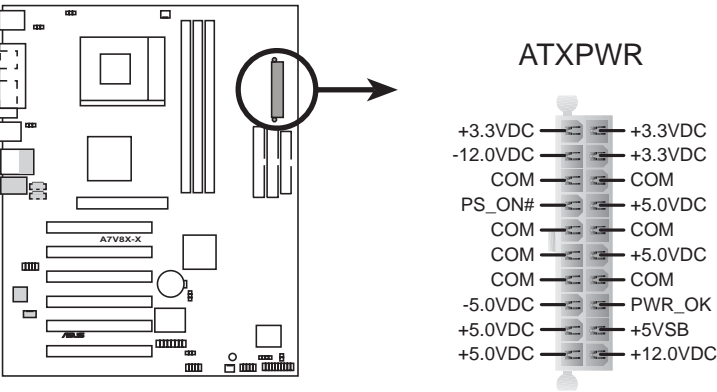

A7V8X-X Keyboard Power Setting

1.12   Connectors

This section describes and illustrates the connectors on the motherboard.

1.   ATX power connectors (20-pin ATXPWR)

These connectors connect to an ATX 12V power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.


ATXPWR

+3.3VDC	+3.3VDC
-12.0VDC	+3.3VDC
COM	COM
PS_ON#	+5.0VDC
COM	COM
COM	+5.0VDC
COM	COM
-5.0VDC	PWR_OK
+5.0VDC	+5VSB
+5.0VDC	+12.0VDC

A7V8X-X ATX Power Connectors

> If you will need to replace the power supply in the future, make sure that your new ATX 12V power supply can provide 8A on the +12V lead and at least 1A on the +5-volt standby lead (+5VSB). The minimum recommended wattage is 230W, or 300W for a fully configured system. The system may become unstable and may experience difficulty powering up if the power supply is inadequate.

2.   USB headers (10-1 pin USB56)

If the USB 2.0 port connectors on the back panel are inadequate, two USB headers (blue headers) are available for four additional USB port connectors. Connect a 2-port USB connector set to a USB header and mount the USB bracket to an open slot in the chassis.

USB56

USB+6V
USB_P6-
USB_P6+
GND
NC

USB+5V
USB_P5-
USB_P5+
GND

1
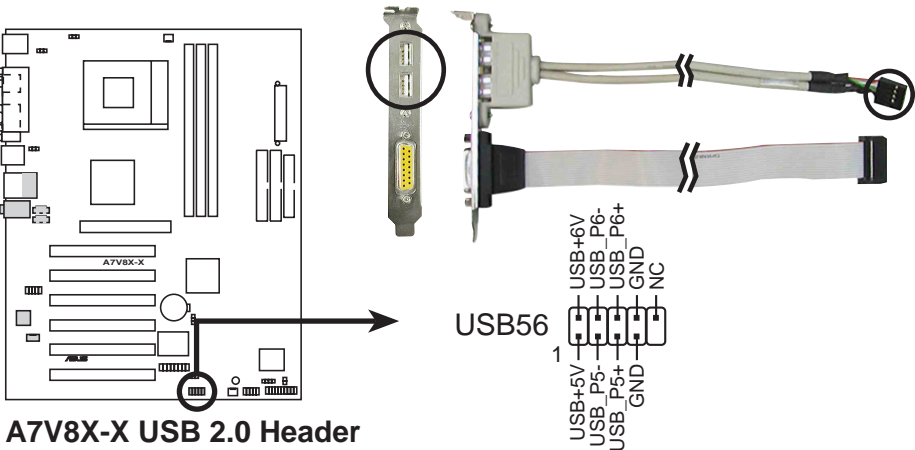
A7V8X-X USB 2.0 Header

> The USB/GAME module is not included in the package.

3. IDE connectors (40-1 pin PRI_IDE, SEC_IDE)

This connector supports the provided UltraDMA/133/100/66 IDE hard disk ribbon cable. Connect the cable's blue connector to the primary (recommended) or secondary IDE connector, then connect the gray connector to the UltraDMA/133/100/66 slave device (hard disk drive) and the black connector to the UltraDMA/133/100/66 master device. It is recommended that you connect non-UltraDMA/133/100/66 devices to the secondary IDE connector. If you install two hard disks, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings. BIOS supports specific device bootup. If you have more than two UltraDMA/133/100/66 devices, purchase another UltraDMA/133/100/66 cable. You may configure two hard disks to be both master devices with two ribbon cables – one for the primary IDE connector and another for the secondary IDE connector.
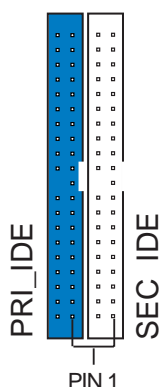
Pin 20 on each IDE connector is removed to match the covered hole on the UltraDMA cable connector. This prevents incorrect orientation when you connect the cables.

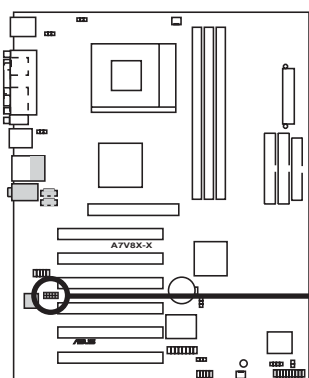For UltraDMA/133/100/66 IDE devices, use an 80-conductor IDE cable.
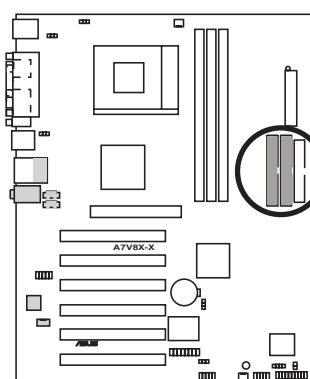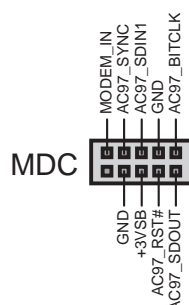
A7V8X-X IDE Connectors

PIN 1

PRI_IDE   SEC_IDE

NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1.

4. MDC header (10-1 pin MDC)

This ASUS proprietary modem header accomodates an optional modem module.

A7V8X-X MDC Header

MDC

MODEM_IN
AC97_SYNC
AC97_SDIN1
GND
AC97_BITCLK

GND
+3VSB
AC97_RST#
AC97_SDOUT

5. Floppy disk drive connector (34-1 pin FLOPPY)

This connector supports the provided floppy drive ribbon cable. After connecting one end to the motherboard, connect the other end to the floppy drive. (Pin 5 is removed to prevent incorrect insertion when using ribbon cables with pin 5 plug).
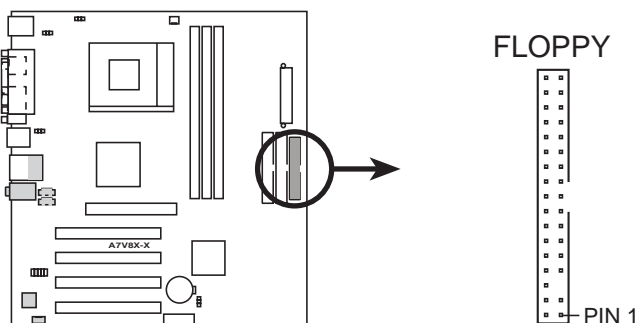

FLOPPY

PIN 1

NOTE: Orient the red markings on the floppy ribbon cable to PIN 1.

A7V8X-X Floppy Disk Drive Connector

6. CPU and Chassis Fan Connectors (3-pin CPU_FAN, CHA_FAN)

The two fan connectors support cooling fans of 350mA (4.2 Watts) or a total of 1A (12W) at +12V. Orient the fans so that the heat sink fins allow air flow to go across the onboard heat sinks instead of the expansion slots. The fan wiring and plug may vary depending on the fan manufacturer. Connect the fan cable to the connector matching the black wire to the ground pin.

CPU_FAN

GND +12V Rotation

CHA_FAN

Rotation +12V GND
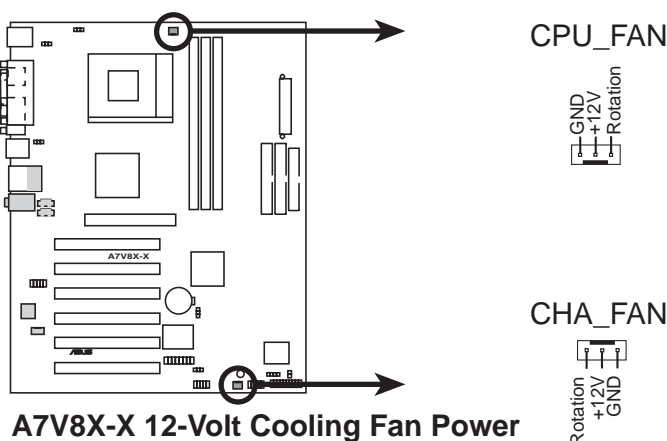
A7V8X-X 12-Volt Cooling Fan Power

Do not forget to connect the fan cables to the fan connectors. Lack of sufficient air flow within the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors!

## 7. Internal audio connectors (4-pin AUX, CD)

These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.
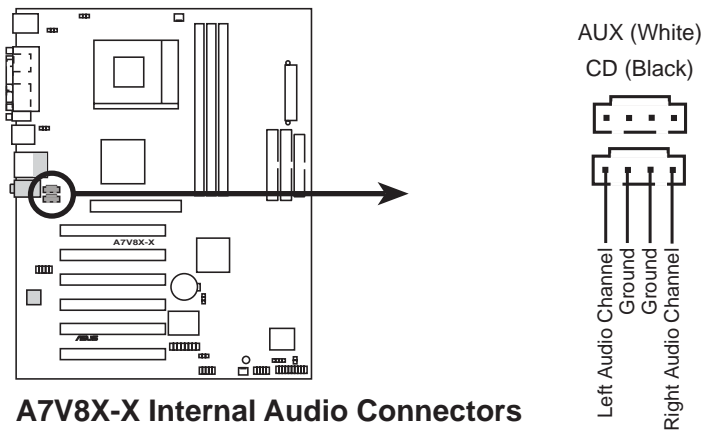
A7V8X-X Internal Audio Connectors

AUX (White)
CD (Black)

Left Audio Channel
Ground
Ground
Right Audio Channel

## 8. Front panel audio connectors (10-1 pin FP_AUDIO)

This is an interface for the Intel front panel audio cable that allow convenient connection and control of audio devices.
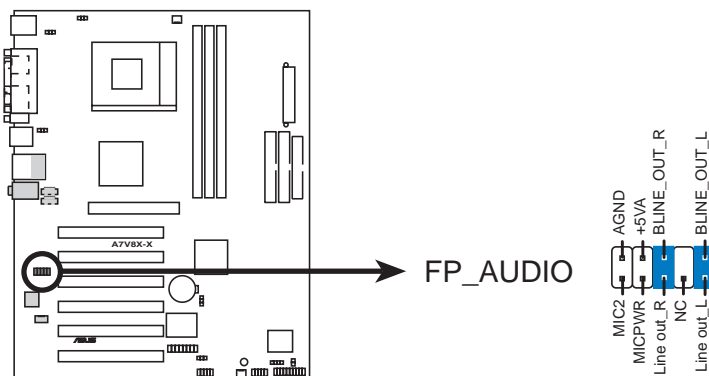
A7V8X-X Front Panel Audio Connector

FP_AUDIO

AGND
+5VA
BLINE_OUT_R
BLINE_OUT_L

MIC2
MICPWR
Line out_R
NC
Line out_L

9. Hard disk connector (2-pin IDE_LED)

This 2-pin connector connects to the front panel HD LED and lights up on every read/write activity of any of the disc drives connected to the primary or secondary IDE slots.


IDE_LED

–
+

TIP: If the case-mounted LED does not light, try reversing the 2-pin plug.
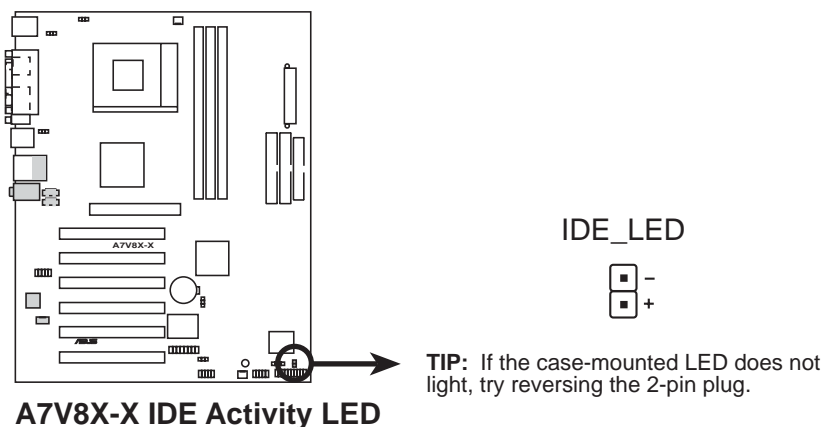
A7V8X-X IDE Activity LED

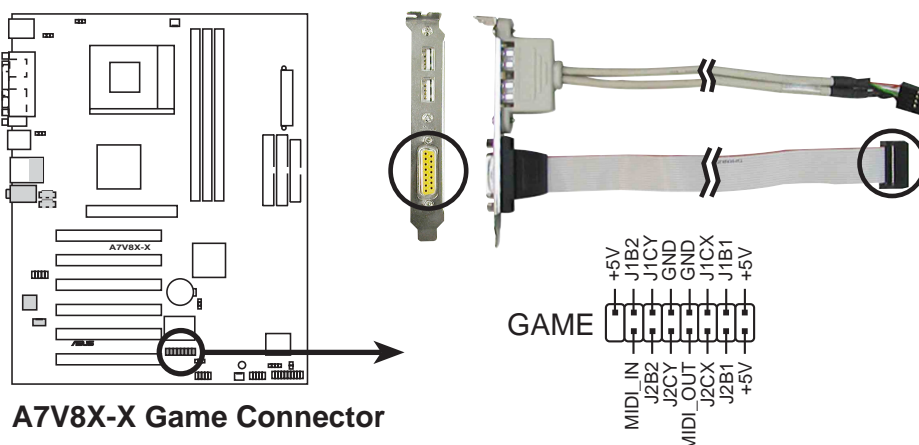## 10. Chassis intrusion connector (4-1 pin CHASSIS)

This lead is for a chassis designed with intrusion detection feature. This requires an external detection mechanism such as a chassis intrusion sensor or microswitch. When you remove any chassis component, the sensor triggers and sends a high-level signal to this lead to record a chassis intrusion event.

By default, the pins labeled "Chassis Signal" and "Ground" are shorted with a jumper cap. If you wish to use the chassis intrusion detection feature, remove the jumper cap from the pins.

A7V8X-X Chassis Alarm Lead

CHASSIS

+5VSB_MB
Chassis Signal
GND

(Default)
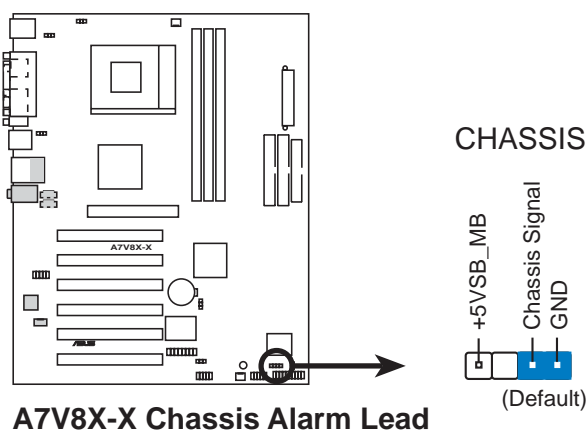
11. GAME/MIDI connector (16-1 pin GAME) *(on Audio model only)*

This connector supports a GAME/MIDI module. If your package came with the optional USB 2.0/GAME module, connect the GAME/MIDI cable to this connector. The GAME/MIDI port on the module connects a joystick or a game pad for playing games, and MIDI devices for playing or editing audio files.

A7V8X-X Game Connector

GAME

+5V
J1B2
J1CY
GND
GND
J1CX
J1B1
+5V

MIDI_IN
J2B2
J2CY
MIDI_OUT
J2CX
J2B1
+5V

The USB/GAME module is not included in the package.

12. System panel connector (20-pin PANEL)

This connector accommodates several system front panel functions.

A7V8X-X System Panel Connectors

* Requires an ATX power supply.
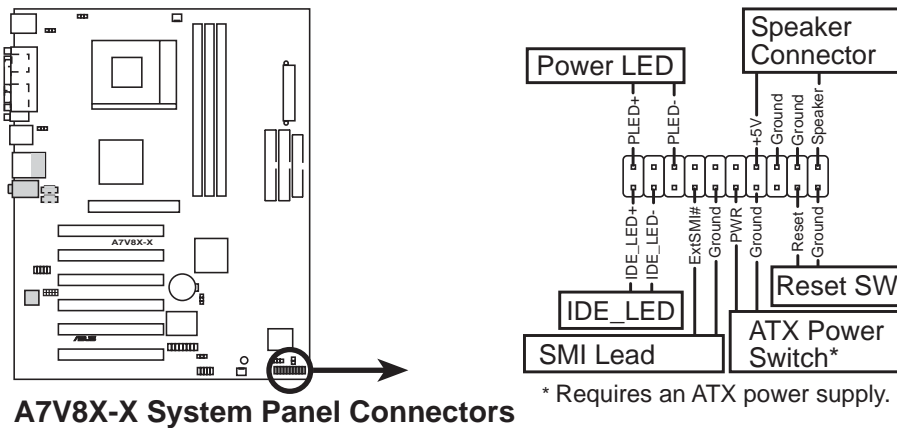
- **System Power LED Lead (3-1 pin PLED)**

  This 3-1 pin connector connects to the system power LED. The LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **System Warning Speaker Lead (4-pin SPKR)**

  This 4-pin connector connects to the case-mounted speaker and allows you to hear system beeps and warnings.

- **System Management Interrupt Lead (2-pin SMI)**

  This 2-pin connector allows you to manually place the system into a suspend mode, or "green" mode, where system activity is instantly decreased to save power and to expand the life of certain system components. Attach the case-mounted suspend switch to this 2-pin connector.

- **ATX Power Switch/Soft-off Switch Lead (2-pin PWR)**

  This connector connects a switch that controls the system power. Pressing the power switch turns the system between ON and SLEEP, or ON and SOFT OFF, depending on the BIOS or OS settings. Pressing the power switch while in the ON mode for more than 4 seconds turns the system OFF.

- **Reset Switch Lead (2-pin RESET)**

  This 2-pin connector connects to the case-mounted reset switch for rebooting the system without turning off the system power.

- **Hard Disk LED (2-pin IDE_LED)**

  This 2-pin connector connects to the front panel HD LED and lights up on every read/write activity of any of the disc drives connected to the primary or secondary IDE slots.

Chapter 2

This chapter gives information about the ASUS A7V8X-X Binary Input/Output System (BIOS).This chapter includes updating the BIOS using the ASUS AFLASH BIOS that is bundled with the support CD.

BIOS Information

2.1 Managing and Updating your BIOS

It is recommended that you save a copy of the motherboard's **original BIOS** to a bootable floppy disk in case you need to reinstall the original BIOS later.

2.1.1 Using ASUS EZ Flash to update the BIOS

The ASUS EZ Flash feature allows you to easily update the BIOS without having to go through the long process of booting from a diskette and using a DOS-based utility. The EZ Flash is built-in the BIOS firmware so it is accessible by simply pressing <Alt> + <F2> during the Power-On Self Tests (POST).

Follow these steps to update the BIOS using ASUS EZ Flash.

1. Download the latest BIOS file from the ASUS website (see ASUS contact information on page x). Save the file to a floppy disk.

Write down the BIOS file name on a piece of paper. You need to type the **exact BIOS file name** at the EZ Flash screen.

2. Reboot the computer.
3. To use EZ Flash, press <Alt> + <F2> during POST to display the following screen.

```
                    ASUS EZ Flash V1.00
            Copyright (C) 2002, ASUSTeK COMPUTER INC.

[Onboard BIOS Information]
BIOS Version    : ASUS A7V8X-X BIOS Revision 1001 Beta 003
BIOS Model      : A7V8X-X
BIOS Built Date : 12/14/02

Please Enter File Name for NEW BIOS: _
*Note: EZ Flash will copy file from A:\, Press [ESC] to reboot
```

The BIOS information in the above screen is for reference only. What you see on your screen may not be exactly the same as shown.

4. Insert the disk that contains the new BIOS file into the floppy drive. You will receive the error message, **"WARNING! Device not ready."** if you proceed to step 5 without the disk in the drive.